Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Description of Studies Published From October 20, 2020, to June 17, 2021

Authors	Journal	Location	Study period	No. index cases	Index case symptom status	Contact type (household, family)	Duration of follow-up (days)	Test used to diagnose contacts	Universal testing or only symptomatic	Number of tests per contact	Overall SAR (infected/total)
Akaishi et al.[1]	Scientific Reports	Miyagi Prefecture, Japan	July, 2020 – March, 2021	–	Symptomatic and asymptomatic	Household	14	RT-PCR	Universal	1	12.6% (144/1,144)
Areekal et al.[2]	Journal of Clinical & Diagnostic Research	Kerala, India	June–July, 2020	267	Symptomatic and asymptomatic	Household	14	RT-PCR	Universal	1	26.0% (221/849)
Awang et al.[3]	Infectious Diseases	Terengganu, Malaysia	October 22–November 15, 2020	–	Symptomatic	Household	21	RT-PCR	Universal	1	20.6% (14/68)
Bender et al.[4]	Emerging Infectious Diseases	Southern Germany	March, 2020	–	Symptomatic and asymptomatic	Household	14	Laboratory test or symptom-based	Universal	1	Lab test only: 12.5% (4/32) Respiratory symptoms: 28.6% (12/42)
Carazo et al.[5]	Infection Control & Hospital Epidemiology	Quebec, Canada	March 1–June 14, 2020	3823	Symptomatic	Household	–	Symptom-based; No testing	Symptom-based	–	29.8% (2,718/9,096)
Cerami et al.[6]	Preprint	North Carolina, USA	April 29–October 16, 2020	99	Symptomatic	Household	28	RT-PCR and antibody test	Universal	4 PCR	PCR + antibody test: 60.2% (106/176)

											PCR only: 73 positive at baseline + 25 more during follow-up=98 55.7% (98/176)
Charbonnier et al.[7]	Frontiers in Pediatrics	Paris, France	May 8–July 27, 2020	34	Symptomatic and asymptomatic	Household	14	RT-PCR	Universal	1	PCR only: 13.0% (24/184)
Demko et al.[8]	Open Forum Infectious Diseases	Baltimore, USA	April 21–July 23, 2020	74	72/74 were symptomatic	Household	28	RT-PCR	Symptomatic	1	53.4% (102/191)
Gomaa et al.[9]	PLOS Pathogens	Egypt	April–October, 2020	23	Symptomatic	Household	14	RT-PCR and antibody test	Universal	5 PCR	PCR + antibody test: 89.8% (88/98) PCR only: 67.3% (66/98)
Grijalva et al.[10]	Morbidity and Mortality Weekly Report	Tennessee & Wisconsin, USA	April–September, 2020	101	Symptomatic	Household	14	RT-PCR	Universal	Multiple	53.4% (102/191)
Harris et al.[11]	Preprint	England	January 4–February 28, 2021	365,447-4,107-20,110=341,230	Symptomatic	Household	14	RT-PCR	Symptomatic	–	Unvaccinated index cases: 10.1% (96,898/960,765)
Hsu et al.[12]	Journal of the Formosan	Taiwan	January 28, 2020 to –	26	–	Household	14	RT-PCR	Symptomatic	1	46.2% (18/39)

	Medical Association		February 28, 2021								
Hu et al.[13]	International Journal of Infectious Diseases	Guangzhou, China	January–March, 2020	100	Symptomatic	Household	14	RT-PCR	Universal	At least twice	17.2% (46/267)
Jashanin ejad et al.[14]	Journal of Research in Health Sciences	Hamadan, Iran	Mid-May–mid-July, 2020	323	Symptomatic and asymptomatic	Household	14	RT-PCR	Universal	1	31.7% (314/989)
Koureas et al.[15]	International Journal of Environmental Research and Public Health	Thessaly, Greece	April 8–June 4, 2020	135	Symptomatic and asymptomatic	Household	–	RT-PCR	Universal	–	38.6% (95/246)
Kuba et al.[16]	Japanese Journal of Infectious Diseases	Okinawa, Japan	February 14–May 31, 2020	78	Symptomatic	Household	14	RT-PCR	Symptomatic	1	12.1% (21/174)
Li et al.[17]	The Lancet Infectious Diseases	Wuhan, China	December 2, 2019–April 18, 2020	29578	Symptomatic and asymptomatic	Household	14	RT-PCR	Universal	1	16.0% (8,447/52,822)
Loenenbach et al.[18]	Eurosurveillance	Germany	January–February, 2021	38	Symptomatic and asymptomatic	Household	At least 7	RT-PCR	Symptomatic	1	37.0% (34/92)
Lyngse et al.[19]	Preprint	Denmark	January 11–February 7, 2021	8,093	–	Household	14	RT-PCR and whole genome sequencing	–	–	24.9% (4,133/16,612)

Metlay et al.[20]	JAMA Network Open	Boston, USA	March–May, 2020	7262	Symptomatic	Household	–	–	Symptomatic	–	10.1% (1,809/17,917)
Miyahara et al.[21]	Emerging Infectious Diseases	Japan	February 22–May 31, 2020	306	Symptomatic and asymptomatic	Family	14	RT-PCR	Universal	1	19.0% (147/775)
Ng et al.[22]	The Lancet Infectious Diseases	Singapore	January 23–April 3, 2020	581	Symptomatic	Household	14	RT-PCR	Symptomatic	1	5.9% (105/1,779)
Peng et al.[23]	Clinical Infectious Diseases	San Francisco, USA	January, 2021	319	Symptomatic and asymptomatic	Household	–	Genome sequencing	Universal	1	32.3% (283/867)
Pett et al.[24]	Epidemiology & Infection	Northern Ireland	February 26–April 26, 2020	27	Symptomatic	Household	14	–	Symptomatic	Symptom based	15.9% (7/44)
Reid et al.[25]	Open Forum Infectious Diseases	San Francisco, USA	June 8–August 31, 2020	–	Symptomatic	Household	14	RT-PCR	Universal	2	35.2% (839/2,381)
Semakula et al.[26]	BMJ Global Health	Rwanda	March 14 –July 20, 2020	–	Symptomatic and asymptomatic	Household	7–14	RT-PCR	Universal	At least twice	2.9% (18/615)
Seto et al.[27]	Japanese Journal of Infectious Diseases	Yamagata, Japan	January 3–May 31, 2020	69	Symptomatic and asymptomatic	Household	14	RT-PCR	Universal	1	22.0% (29/132)
Sundar et al.[28]	Germs	Chennai, India	August 1–20, 2020	18	Symptomatic	Household	–	RT-PCR	Universal	1	43.7% (28/64)
Tak et al.[29]	Infectious Disease Modelling	India	March 25–April 24, 2020	–	Symptomatic	Household	–	RT-PCR	Universal	1	73.8% (45/61)
Tanaka et al.[30]	Preprint	Los Angeles, USA	June 17–Decemb	135	Symptomatic or	Household	28	RT-PCR and	Universal	6	PCR + antibody tests:

			er 31, 2020		asymptomatic			antibody test			77.7% reported in Results 238 secondary cases + 78 non-cases=316 total contacts reported in Table 2. PCR only SAR = 63.2% (reported in Results). Therefore, 316*.632=200; SAR=63.2% (200/316)
Telle et al.[31]	European Journal of Epidemiology	Norway	March 1, 2020–January 31, 2021	7548	Symptomatic and asymptomatic	Household	7	RT-PCR	Universal	1	SAR7=20.7% (4,030/19,443)
Tibebu et al.[32]	Preprint	Ontario, Canada	July 1–November 30, 2020	29352	Symptomatic and asymptomatic	Household	14-28	Symptom-based; No testing	Symptom based	–	19.5% (16,404/84,125)
Trunfio et al.[33]	Frontiers	Turin, Italy	March, 2020	132	Symptomatic and asymptomatic	Household	–	RT-PCR or symptom-based	Universal	1	PCR only (176 tested): 25.6% (74/289)

											PCR + "signs and symptoms suggestive of COVID-19" after the onset of the linked index case= 35.3% (102/289)
Vallès et al.[34]	Public Health	Barcelona, Spain	May–July 2020,	81	Symptomatic	Household	14	RT-PCR	Universal	2	223 household members * .483=108 48.3% (108/223)
Verberk et al.[35]	Preprint	Netherlands and Belgium	April 20–December 2, 2020	117	Symptomatic and asymptomatic	Household	21	RT-PCR and antibody test	Symptomatic	1	PCR + antibody test: 27.9% (74/265) PCR only: 16.6% (44/265)
Wilkinson et al.[36]	Canadian Journal of Public Health	Winnipeg, Canada	mid-March–April 28, 2020	102	Symptomatic	Household	14	–	Symptomatic	–	14.7% (41/279)
Wu et al.[37]	Clinical Infectious Diseases	China	January 5–April 7, 2020	578	Symptomatic and asymptomatic	Household	14	RT-PCR	Universal	1	6.9% (104/1,516)

eTable 2. Household Secondary Attack Rates for SARS-CoV-2, Restricted to Studies With a More Uniform Design[a]

	No. studies	SAR (95% CI)
Overall SAR		
Laboratory confirmed + probable untested symptomatic cases	47[b]	19.9% (16.2–24.2%)
Laboratory confirmed results only	47[b]	19.4% (15.8–23.6%)
Contact age		
Adults (≥18 years)	12[c]	28.3% (19.6–39.0%)
Children (<18 years)	12[c]	17.9% (11.6–26.5%)
Contact sex		
Female	10[c]	23.0% (16.4–31.2%)
Male	10[c]	19.3% (12.5–28.6%)
Contact ethnicity[d]		
Hispanic/Latino	3	36.0% (16.7–61.2%)
Non-Hispanic/Latino	3	36.4% (25.7–48.8%)
Relationship to index case		
Spouse	6	32.5% (24.9–41.3%)
Other	6	16.2% (10.6–24.1%)
Index case age		
Adults	7	22.2% (13.4–34.5%)
Children	7	16.5% (9.7–26.6%)
Index case sex		
Female	9[c]	23.5% (15.3–34.2%)
Male	9[c]	21.8% (14.3–31.7%)
Index case symptom status[e]		
Symptomatic	7	19.9% (12.9–29.4%)
Asymptomatic	5	2.0% (1.5–2.8%)
Presymptomatic	2	5.2% (2.0–13.0%)
Asymptomatic/presymptomatic	7	3.3% (1.7–6.4%)
Index case fever		
Yes	2	26.4% (11.5–22.9%)
No	2	13.2% (9.2–18.5%)
Index case cough		
Yes	2	15.3% (10.5–21.8%)
No	2	17.3% (13.6–21.7%)
Number of contacts in household		
1	4	32.6% (15.4–56.4%)
2	4	36.6% (18.7–59.1%)

≥3	4	28.7% (19.6–39.9%)
Location		
China or Singapore	18[b]	13.6% (11.4–16.1%)
Other	29	24.9% (19.0–31.9%)
Index case identification time period excluding overlapping dates		
December, 2019 – April, 2020	32[b]	16.9% (13.7–20.7%)
July, 2020 – March, 2021	7	31.3% (23.1–40.9%)
Restricted to studies that tested all contacts at least twice	12[c]	21.5% (12.6–34.1%)
Proportion of households with any secondary transmission	6	37.8% (20.0–59.6%)

SAR: secondary attack rate; CI: confidence interval

[a] Excludes studies with only asymptomatic[38] or pediatric[7,39] index cases, that tested only symptomatic[5,8,11,12,16,18,20,22,24,32,35,36,40-55] or asymptomatic[56] contacts, with long follow-up (≥21 days),[3,6,8,30,52,57] and preprints.[6,11,30,32,40,48,49,52,58,59]

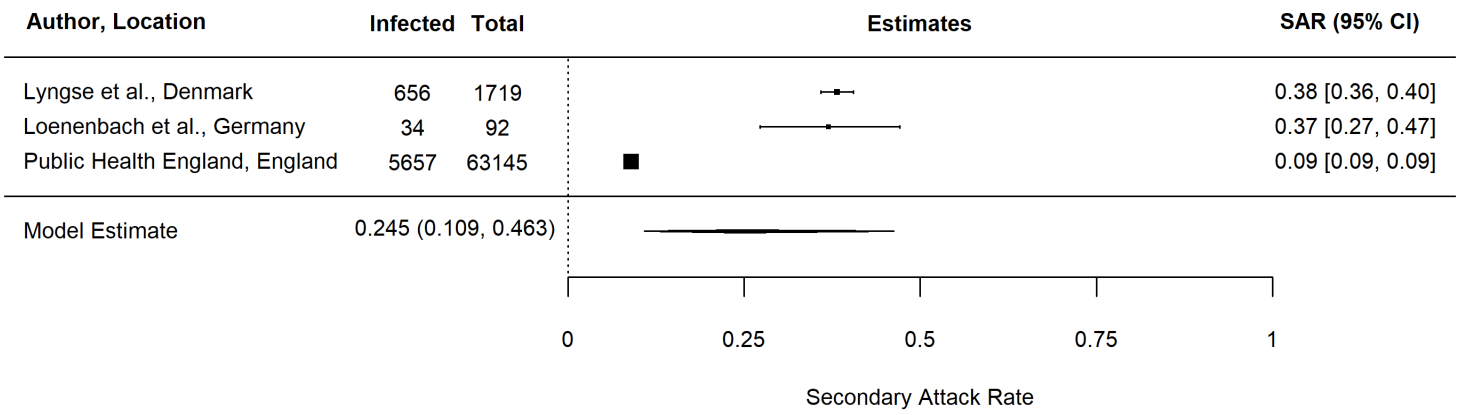
[b] Excludes four studies from original analysis from Wuhan[60-63] that had overlapping populations with Li *et al*.[17]

[c] Excludes one study from original analysis from Wuhan[63] that had overlapping populations with Li *et al*.[17]

[d] Restricted to studies in the United States.

[e] Restricted to studies that disaggregated secondary attack rates for at least two of: symptomatic, presymptomatic, and asymptomatic.

eFigure. Household Secondary Attack Rates of SARS-CoV-2 for B.1.1.7 (α) Variant



Point sizes are an inverse function of the precision of the estimates and bars correspond to 95% confidence intervals.

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